Keys to the Flora of Florida -- 3, Boraginaceae [1]

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ABSTRACT: A key is provided to the 10 genera of Boraginaceae native and naturalized in the state of Florida, U.S.A. The genera, with the number of included species, are: *Bourreria*, 3; *Buglossoides*, 1; *Cordia*, 2; *Cynoglossum*, 2; *Heliotropium*, 7; *Lithospermum*, 3; *Mallotonia*, 1; *Myosotis*, 1; *Onosmodium*, 1; and *Tournefortia*, 2. Amplified keys are presented to the species within each genus. The keys are supplemented with discussion of nomenclature and justification of generic placement and specific delimitation in *Bourreria*, *Buglossoides*, *Heliotropium*, and *Mallotonia*. *Buglossoides arvensis*, *Cynoglossum furcatum*, *Heliotropium procumbens*, and *Myosotis macrosperma* are newly reported for Florida. *Heliotropium europaeum*, *Myosotis virginica*, and *Borago officinalis* are excluded.

BORAGINACEAE Juss. Borage Family

The Boraginaceae well typify the southeastern family as treated by J. K. Small. He placed its species also in two segregate families, Ehretiaceae and Heliotropiaceae, which are not now generally recognized. The numerous papers of I. M. Johnston are most important in determining generic alignments and the nomenclature of many species.

1. Shrubs, small trees, or woody vines.

    2. Leaves linear-spatulate, succulent, with dense silky-gray pubescence. Mallotonia

    2. Leaves broad, membranous, variously pubescent to glabrous but not silky-gray.

        3. Shrubs or small trees; styles divided toward apex.

            4. Styles once forked; flowers small, white, in open cymes. Bourreria

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4. Styles twice forked; flowers large and orange *or* small and in dense heads.

3. Woody vines or rarely low shrubs; styles wholly united. Tournefortia

1. Annual or perennial herbs.

5. Flowers in condensed terminal cymes.

6. Annual; corolla white to bluish. Buglossoides

6. Perennial; corolla pale yellow to orange-yellow. Lithospermum

5. Flowers in elongate cymes usually showing pronounced scorpioid curvature.

7. Style long-exserted from corolla. Onosmodium

7. Style short, included in corolla.

8. Nutlets with stout hooked (grapnel-like) bristles; cauline leaves clasping. Cynoglossum

8. Nutlets without hooked bristles; cauline leaves cuneate to petiolate.

9. Flowers sessile; style at apex of ovary. Heliotropium

9. Flowers short-pedicellate; style arising between ovary lobes. Myosotis

BOURRERIA

The Strongbacks have not been given sufficient attention by previous workers to permit confident naming of all Florida plants. Johnston almost wholly omitted study of *Bourreria*, leaving a revision by Schulz (in Urban, Symbolae Antillanae 7:45-70. 1911) the only comprehensive analysis of the genus. The Rough Strongback, a shrub or small tree of the lower Florida Keys, has from an early date been distinguished by its strigose leaves from the much more common smooth-leaved Bahama Strongback, *B. ovata* Miers, yet doubt remains as to its correct scientific name.

The Rough Strongback was well described from Florida materials at least as early as 1860 by Chapman (Flora of the Southern United States, ed. 1) under the name *Ehretia radula* Poir. Small (Flora of the Southeastern United States, ed. 1. 1903) and others soon named the plant *Bourreria radula*, in recognition of its correct generic placement. The epithet "radula," or *rasp*, seemed a felicitous term for the distinctive abrasive leaves of this plant.

Loss of this mnemonic word was a consequence of the 1911 revision by Schulz. He saw the rough-leaved Florida plant as falling within *Bourreria revoluta* HBK. and made that in turn a variety (var. *revoluta* (HBK.) O. E. Schulz) of the generic type, *B. succulenta* Jacq. (1760). Assignment of the Florida plant to *revoluta* (although at the specific level) was accepted by Britton & Wilson (Sci. Survey of Porto Rico and the Virgin Islands, 1930) and by Small (Manual of the Southeastern Flora, 1933), and more recently has been employed by Little (Checklist of Native and Naturalized Trees, 1953). Long & Lakela (Flora of Tropical Florida, 1971) conformed more closely to Schulz, treating *revoluta* as a variety of *B. succulenta* (although incorrectly attributing this last species to C. E. Stahl, a twelve year old boy on the centennial of Jacquin'a actual description).

The epithet *revoluta*, however, whether used at the level of species or variety, cannot refer to the Florida plant. *Bourreria revoluta* was based by Kunth (Nov. Gen. 3:67. 1818) on materials from Regla, Hidalgo, Mexico, at an elevation above 2000 m., and was described as glabrous. In habitat and form it is unlikely to be the rough-leaved Florida plant, and in date it is preceded by more probable Antillean names.

The name that most certainly applies to the Florida rough-leaved plant, although not necessarily the earliest, is *Bourreria radula* (Poir. in Lam.) G. Don, based upon *Ehretia radula* Poir. (in Lamarck, Encyc. suppl. 2:2. 1811). Although typified by materials from Hispaniola, it was described by Poiret in terms that were both detailed and apt for the plants of the Florida Keys; the leaves, in part, were seen as "toutes couvertes en dessus de points blancs tres-rudes," an unmistakable reference to the distinctive stout white-based hairs of the upper leaf surface. Although Schulz considered *B. radula* to be synonymous with a second Hispaniolan species, *B. tomentosa* (Lam.) G. Don, that name has not previously been applied to Florida materials, and the tomentose lower leaf surface of *B. tomentosa* may preclude such application. Until the much needed further study of this genus is undertaken, it seems both prudent and satisfying to return to the epithet long ago employed by Chapman, with the Rough Strongback again known as *Bourreria radula*.

In recent literature regarding the Florida species of *Bourreria*, the common name often employed has been "Strongbark," surely a corruption of the Bahamian "Strongback," in reference to the practice (still continued, as observed by George Avery) of using the leaves in a tea which will give one "strength to work all day."

Bourreria P. Browne Strongbacks

1. Leaves narrowly obovate to spatulate, hispidulous above, small (blade to 2.5 cm. long, 0.8 - 1.2 cm. wide; petiole to 3 mm. long); flowers white; drupes orange, 7 - 8 mm. broad; small twiggy shrub, under favorable conditions to 2.5 m. tall but usually much lower; very local and now nearing extinction through habitat destruction, pinelands of Big Pine Key, Monroe County, and Long Pine Key of the Everglades National Park, Dade County. July - September.
   LITTLE STRONGBACK. B. cassinifolia (A. Rich.) Griseb.

1. Leaves broadly obovate, of medium size (blade 2.5 - 6 cm. long, 1.4 - 4 cm. wide; petiole 3 - 18 mm. long); drupes 8 - 11 mm. broad.

   2. Leaves strigose above, the individual hairs stout and at length white-based; petioles 3 - 7 mm. long; cymes usually few (5 - 30) - flowered; flowers white; drupes orange; small tree; originally in dry hammocks of Key West, now precariously persisting in yards, with a few individuals on adjacent keys. Nearly all year. [*B. revoluta* HBK., misapplied]
      ROUGH STRONGBACK. B. radula (Poir. in Lam.) G. Don

   2. Leaves smooth above; petioles 10 - 18 mm. long, rarely less; cymes often many (20 - 80) - flowered; flowers white; drupes yellow to orange-red with increasing maturity; small to occasionally fair-sized tree; frequent in hammocks, at times somewhat adventive in cut-over areas, throughout the Keys, sparingly at Bear Lake and elsewhere near the edge of Florida Bay. June - October.
      BAHAMA STRONGBACK. B. ovata Miers

BUGLOSSOIDES

This genus has been segregated by I. M. Johnston (Jour. Arnold Arb. 35:38-46. 1954) from *Lithospermum* primarily on the basis of its well developed insect guide lines in the corolla throat, with a number of its other floral features (apiculate anthers, lobed sterile tip of style, small cylindric pollen, and blue as a common corolla color) occurring only sporadically else-

where in *Lithospermum* or allied genera and never with the same degree of uniformity as in *Buglossoides*. The desirability of adopting this ineuphonious name has not impressed itself upon most recent floristic writers (cf. Hommersand in Radford et al., Manual of the Vascular Plants of the Carolinas, 1968), but Johnston's rationale for its separation from *Lithospermum* is clearly expressed and seems well founded and has been concurred in by such modern writers as Correll & M. C. Johnston (Manual of the Vascular Plants of Texas, 1970) and Fernandes (in Tutin et al., Flora Europaea, 1972).

The one Florida species, *Buglossoides arvensis*, is based on two remote collections which appear to be the first legitimate records of this plant for the state. Fernald (Gray's Manual of Botany, 1950) reported for the species (as *Lithospermum arvense*) to extend "s. to Fla." However, no documenting specimen presently exists at the Gray Herbarium, nor is there other indication of the basis for Fernald's statement.

Buglossoides Moench Gromwells

1. Flowers small, corolla scarcely exceeding calyx, white with tube purplish-blue below; nutlets gray with the surface elaborately wrinkled and pitted; leaves oblong-lanceolate, small; annual herb; weedy elsewhere, known in Florida only from two collections: open pineland, Tampa, Hillsborough County [*S. C. Hood 4147*, 26 Apr 1951, FLAS]; vacant lot, Pensacola, Escambia County [*J. R. Burkhalter 3473*, 6 Mar 1976, FLAS]. March - April. [*Lithospermum arvense* L.]
CORN GROMWELL. B. arvensis (L.) I. M. Johnst.

CORDIA

The two Florida species of *Cordia* have very similar ranges but greatly different structure, a fact recognized by Small (Manual of the Southeastern Flora, 1933) who placed them in different genera. Studies by Johnston (Jour. Arnold Arb. 30:85-104. 1949; 30:111-127. 1949) are helpful in placing these species in proper relation to each other and to their allies.

Cordia L. Cordias

1. Corolla orange, 3 - 4 cm. long; fruit tightly enclosed by fleshy white calyx, 2 - 2.5 cm. long at maturity; leaves entire, broadly ovate, the blade 15 - 20 cm. long, on a 3 - 5 cm. petiole, occasionally much smaller; shrub or small tree; infrequent but conspicuous in flower, hammocks, rocky areas,

roadsides, often in cultivation; Florida Keys and (more rarely) southern Dade County. June - October. [*Sebesten Sebestena* (L.) Britt.]
GEIGER-TREE C. sebestena L.

1. Corolla white, about 0.7 cm. long; fruit a red naked one-seeded drupe, 0.3 - 0.5 cm. long; leaves coarsely serrate, ovate, 2 - 3 cm. long; weak-stemmed shrub; occasional, in hammocks on Florida Keys, rarely on north shore of Florida Bay. [All Florida materials have been determined as var. *humilis* (Jacq.) I. M. Johnston.] May - August (December). [*Varronia globosa* Jacq.]
VARRONIA. C. globosa (Jacq.) Kunth

CYNOGLOSSUM

Cynoglossum furcatum Wall. in Roxb., an Indian species not previously reported for continental North America, has been collected near the south shore of Lake Okeechobee (see key, below). Its occurrence elsewhere in the New World has been noted only by Liogier (Rhodora 67:349. 1965) who records it for Maricao, Puerto Rico. In 1932 it was grown as a cultivated ornamental in Gainesville (*Watkins*, FLAS), but at the present time it does not seem to be known in Florida horticulture. It is not known whether the Okeechobee plants were derived from this or other intentional introductions, or were truly adventive. Recent collection activities in the Okeechobee area have not encountered the species.

The second species of this genus, *Cynoglossum virginianum* L., although an unquestioned native, is a northern plant that has only been recognized in recent years to extend southward into Florida. Neither Chapman nor Small appear to have been aware of its presence on the Apalachicola River bluffs. This may have been a consequence of its occurrence only on the geologically older portions of the bluffs (now in Torreya State Park) away from the meanders of the river; the steamboat landings and early road connections were only at points where the bluffs and river were in proximity so that construction would not be swept away by the yearly floods.

Cynoglossum L. Wild Comfreys

1. Leaves large (to 30 cm. long, 8 cm. wide), basal ones long-petiolate, cauline ones clasping; pubescence coarsely hirsute; flowers white (in ours; often light blue elsewhere); style in fruit shriveled and very inconspicuous; nutlets 6 - 8 mm. long; coarse perennial herb; a single Florida station: wooded

ravines and slopes, Torreya State Park, Liberty County. March - April. [*Cynoglossum "virginicum,"* Chapman, Small, in error.]
WILD COMFREY. C. virginianum L.

1. Leaves small (4 - 6 cm. long, 1 - 1.5 cm. wide), cauline ones clasping; pubescence appressed-silky; flowers blue; style in fruit prominent, 2 mm. long; nutlets 3 mm. long; perennial?; a native of India, collected once in Florida: South Bay, s. of Lake Okeechobee, Palm Beach County [*W. M. Buswell*, 1 May 1942, FLAS]. April - May.
C. furcatum Wall. in Roxb.

HELIOTROPIUM

The only significant studies of the Florida Heliotropes are those of Johnston (Cont. Gray Herb. 81:21-23. 1928; Jour. Arnold Arb. 30:133-138. 1949), and even those are only incidentally applicable to Florida plants. A recent short note by Long (Rhodora 72:32-33. 1970) has proposed a new varietal combination that these earlier papers would suggest is unneeded.

Long, as others have been, was impressed with the great similarity among three supposed Florida species -- *Heliotropium polyphyllum* Lehm., *H. leavenworthii* Torr., and *H. horizontale* Small -- similarities that Small (Manual of the Southeastern Flora, 1933) managed very largely to obscure. Outside of the literature influenced by Small, this grouping has long been known by the first of these three names. Long saw these names as representing two varieties: var. *polyphyllum* (including *H. leavenworthii*) was erect, often strictly so, while var. *horizontale* (Small) Long, his new combination, included plants that were spreading-decumbent to prostrate. He found these two varieties to be readily distinguishable. In contrast, he found plants with white or with yellow corollas to be unworthy of taxonomic distinction; *H. leavenworthii* had been separated from *H. polyphyllum* primarily on its yellow flowers.

Johnston's papers were not cited by Long and in part compel a different interpretation. The type for Lehmann's *H. polyphyllum* was from coastal northern South America, an area in which Johnston (1928) made particular study of *Heliotropium*. It thus becomes untenable to treat the type of the species as erect, as does Long, in the face of Johnston's observation that "all South American materials referrable to *H. polyphyllum* appears to be prostrate-spreading...."

Johnston does express qualifications as to the Florida plants so to make the reciprocal of his statement not necessarily true: the prostrate Florida plants may themselves not be

identical with the South American type. Resolution of this will come only with further study. But if varietal distinction is desired for the upright plants that predominate in Florida, *H. polyphyllum* var. *leavenworthii* Gray (1874) is available and unambiguous. (It is a curious circumstance that "*Heliotropium Leavenworthii* Torr.," so widely used on specimens of the distinctive yellow-flowered Florida plant, appears not to be properly recorded as to authorship. This epithet was published by Gray in varietal status, with only indirect attribution to Torrey. Seemingly Small (Flora of the Southeastern States, 1903) was the first to give it legitimate specific status; as such it becomes *H. leavenworthii* (Gray) Small.)

The color variations must not be too lightly dismissed. Collectors in Dade County and on the Florida Keys have repeatedly observed that plants growing in close proximity may differ only in the white or yellow colors of their corollas. Yet in most areas of Florida one color or the other predominates or, more commonly, is exclusive. This distribution is approximately given in the accompanying key. The significance of this pattern is unknown, although a reasonable interpretation might be that Florida plants are descended from relatively few introductions of different genic systems further south in the Caribbean. In conformity with both Johnston and Long, these color forms are not here given formal designations.

Equal uncertainty accompanies the level of distinction to be accorded the prostrate to decumbent Florida plants. Small named these *Heliotropium horizontale* (Bull. New York Bot. Gard. 3: 435-436. 1905) on the basis of yellow-flowered collections obtained in the rocky pinelands north and west of Homestead, Dade County. He continued with this habit and range in his later publications. Long, although including Small's types under the new var. *horizontale*, termed the plant a "maritime ecotype," expanded the range northward to Palm Beach on the east coast and Pinellas County on the west coast, included white-flowered specimens (*Perkins*, GH), and increased the permissible height to 2 feet (*Rehder 853*, GH). Defined in this fashion, var. *horizontale* cannot be distinguished from the preponderant Florida form. Yet *H. horizontale*, in the original restricted usage of Small, is worthy of some degree of recognition, at least in its most extreme prostrate form. Since it is surely close to, if not identical with, the typical *H. polyphyllum* of northern South America, it is here tentatively termed var. *polyphyllum*, with var. *leavenworthii* reserved for the much more common upright specimens.

Heliotropium L. Heliotropes

1. Plant completely glabrous, very succulent, usually somewhat glaucous; leaves linear-spatulate, fleshy; stems prostrate

with ascending shoots; corollas white with yellow eye; perennial herb; a frequent plant of coastal shores, usually just above high tide, or on spoil banks or waste areas; Florida Keys north Tampa Bay and to Cape Canaveral, occasionally inland (Putnam, Seminole counties), but there only on brackish soils. March - August.
SEASIDE HELIOTROPE. H. curassavicum L.

1. Plant hairy, not decidedly succulent, never with a waxy bloom.

2. Delicate annual, not above 2 dm. tall; some flowers subtended by foliaceous bracts 2 - 3 times length of flower; corolla minute, white; rare, open hammock, Key West (formerly), Sugarloaf Key. August. [*H. phyllostachyum* Lehm.] H. fruticosum L.

2. Perennial or annual, if annual, lacking foliaceous bracts.

3. Perennial; leaves sessile, linear to narrowly ovate; stems prostrate to erect.

4. Flowers purple with yellow eye; inflorescence a cluster of 2 - 5 prominently scorpioid cymes; leaves to 7 cm. long, 1.5 cm. wide; carpels 2, remaining intact at maturity, each with 2 seeds; plants sprawling to erect; sporadic, but often abundant locally, dry soil of roadsides and waste area, occasionally a lawn weed, north and central peninsular Florida, less often in the Panhandle. March - August. [*H. anchusaefolium* Poir. in Lam.; *Cochranea anchusaefolia* (Poir.) Guerke]
WILD HELIOTROPE. H. amplexicaule Vahl

4. Flowers white, white with yellow eye, or yellow; inflorescence largely unbranched, straight or apically gently curving; leaves to 2 cm. long, 0.2 - 0.3 cm. wide; carpels 2, each splitting at maturity, to form 4 separate nutlets; stems prostrate to erect; frequent, marl prairies, moist pinelands, savannas, brackish shores, and roadbanks; south Florida, north along coasts to Taylor County on west and Volusia County on the east. [This species exhibits complex and as-yet unexplained variations of flower color and habit. In Dade County and on the Florida Keys both white and yellow flowers occur. White predominates from Collier County northward to beyond Tampa Bay, and inland to Highlands County. Only yellow occurs north of Hernando County, in the Pinecrest area of Monroe County, and along the east coast north of Dade County. Particularly near Homestead, Dade County, but occasionally elsewhere, prostrate plants occur;

these may be termed var. *polyphyllum*. They intergrade with much more widespread ascending to erect plants, which may be distinguished as var. *leavenworthii* Gray.] All year. [incl. *H. Leavenworthii* Torr.; *H. horizontale* Small; *H. polyphyllum* var. *horizontale* (Small) Long]

H. polyphyllum Lehm.

3. Annual; leaves petiolate, variously broad, not linear; stems erect.

5. Flowers light purple with white or yellow eye; fruits 2 - 2.5 mm. long, with sharp longitudinal ridges, separating into two 2-seeded nutlets; leaves broadly ovate, the blades 3 - 5 cm. across; weedy herb; uncommon and sporadic, floodplains of Choctawhatchee River and Apalachicola River (Washington, Jackson, Calhoun, Gadsden and Liberty counties). August - September. [*Tiaridium indicum* (L.) Lehm.]

H. indicum L.

5. Flowers white or with yellow eye; fruits 1 - 1.5 mm. long (excluding persistent style base if present), without prominent ridges; leaves narrowly ovate, elliptic, to spatulate, 1.5 - 2.5 (- 3.5) cm. across.

6. Fruits very much broader than long, separating into two 2-seeded nutlets; style lacking on mature fruits; leaves becoming blackened upon drying; common, hammocks, waste areas, shell mounds, citrus groves (where often weedy), roadsides, and saline shores; south Florida, north in coastal counties to Tampa Bay on the west and Volusia County (Turtle Mound) on the east. All year. [*H. parviflorum* L.; *Schobera angiosperma* (Murr.) Britt.]
SCORPION-TAIL

H. angiospermum Murr.

6. Fruits scarcely broader than long, separating into four 1-seeded nutlets; style persisting on mature fruits as a sharp dark beak; leaves remaining green upon drying; rare, an erratic introduction on the wooded floodplain of the Apalachicola River, Calhoun County. August - September. [This species, although newly discovered in Florida (*R. K. Godfrey 75520*, 14 Sept 1976, FLAS, FSU) is familiar along the Gulf Coast westward, where it has been erroneously known as *Heliotropium europaeum* L. (see Excluded Species).]

H. procumbens Mill.

Excluded Species

Heliotropium europaeum L. This species was collected on "waste ground, Pensacola, Florida," in August 1901 [*A. H. Curtiss 6864* (GH), fide C. E. Wood]. Recent active collectors in the Pensacola area have not encountered it, and it is assumed not to have persisted in the state. Its white to bluish flowers, minutely pubescent verrucose nutlets to 3 mm. long, and hirsute stems permit separation from the white (drying yellowish) flowers, strigose but otherwise smooth nutlets to 1.5 mm. long, and appressed-pubescent stems of the closely related *H. procumbens* Mill.

LITHOSPERMUM

This genus has been well treated by Johnston (Jour. Arnold Arb. 33:299-363. 1952) except for his near-total omission of detailed distributional data. *Lithospermum incisum* is more extensively adventive than has been previously recognized. This species is also characterized by the presence of numerous very small cleistogamous flowers, from which most of the nutlets are produced, following withering of the conspicuous and large chasmogamous flowers.

The authorship of *Lithospermum caroliniense* has by now been fully argued (Wilbur, Jour. Elisha Mitchell Sci. Soc. 78:125-132. 1962; Ward, Rhodora 64:87-92. 1962).

Lithospermum L. Puccoons

1. Stems arising from a cluster of basal leaves very much larger than the cauline ones; leaves obovate to elliptic; corollas small (to 6 mm. long), yellow or infrequently cream; roots non-purpling, fusiform and fascicled; perennial herb; local, on moist hardwood slopes and calcareous bluffs, north Florida, disjunct in area of upper Apalachicola drainage (Jackson to Liberty counties) and east of Suwannee River (Suwannee to Alachua counties). March - April.
   L. tuberosum Rugel ex DC.

1. Stems without basal leaves or basal leaves not appreciably larger than the cauline ones; leaves lanceolate to linear (or if ovate, reduced toward base); corollas of chasmogamous flowers large (15 - 35 mm. long); root often causing purpling of pressing and mounting papers.

   2. Stems arising from a stout vertical root which is almost always broken in collecting; root strongly purpling collecting papers, the stain characteristically penetrating

sheets upon which plant is mounted; corollas bright orange-yellow, the lobes entire; stout perennial herb; frequent, dry pinelands, western panhandle Florida, east to Apalachicola River drainage. March - May (August). [*Batschia caroliniensis* (Walt.) Gmel.]
PUCCOON. L. caroliniense (J. F. Gmel.) MacMill.

2. Stems arising from slender taproot, often fully collected; root lightly purpling contiguous papers; corollas bright yellow, the lobes erose; perennial herb; infrequent and sporadic, adventive along sandy roadsides and railroads, occasionally on limestone ledges, north Florida, south to Hernando and Seminole counties. March - April. [*Batschia linearifolia* (Goldie) Small]
L. incisum Lehm.

MALLOTONIA

Florida has one species of this genus, *Mallotonia gnaphalodes*, the Sea-lavender. It is often placed within *Tournfortia*, although its maritime habitat and linear-spatulate gray-pubescent leaves at least superficially set it sharply apart from the species allied to *T. hirsutissima*, the type of that genus. Johnston, the foremost recent student of this group, has not been consistent in its assignment. Initially (Cont. Gray Herb. 92:66-89. 1930) he saw the Sea-lavender as within *Tournefortia*, then he segregated it with two closely related Old World species to form *Messerschmidia* (Jour. Arnold Arb. 16:161-166. 1935), and still later returned it to *Tournefortia* (Jour. Arnold Arb. 30:129-133. 1949).

Messerschmidia had been described originally by Linnaeus (Mantissa 42, 1767; as "*Messersmidia*") as applying to one of the Old World species (*M. sibirica*, of Asia) included by Johnston. The name has undergone various interpretations by later authors, as well as several spellings. Johnston (1930) discussed these aspects rather fully, concluding, "...the confusion that has attended the history of the name is quite sufficient to warrant its rejection as a nomen confusum, at least as far as our American plants are concerned." Later Johnston (1935) reversed field, finding that *Messerschmidia* was indeed an acceptable generic name.

Britton (Ann. Missouri Bot. Gard. 2:47. 1915) transferred the Sea-lavender without comment to form the monotypic *Mallotonia*, and has been followed by Small (Manual of the Southeastern Flora, 1933), Gooding et al. (Flora of Barbados, 1965), Adams (Flowering Plants of Jamaica, 1972), Gillis (Rhodora 76:111. 1974), and others. The rationale for this placement seems never to have been fully discussed, although Johnston (1935), in recognizing

Messerschmidia, called attention not only to its species' wide departure in general appearance from the species of *Tournefortia*, sensu stricto, but to anatomical differences in their corky bark and pubescence structure.

Nor has there been adequate discussion -- or perhaps not adequate realization -- that *Messerschmidia* was used by Linnaeus so many years earlier for a plant that is surely congeneric. It is only by acceptance (by implication, if not by overt intent) of Johnston's argument, which he later abandoned, of the invalidity of *Messerschmidia*, that *Mallotonia* can be seen as the correct segregate name. Perhsps ultimately, if the consensus remains firm that the Sea-lavender (with its two Old World allies) merits generic segregation from *Tournefortia*, conservation of *Mallotonia* via the International Code will provide more certain stability.

Mallotonia Britt. Sea-lavender

1. Leaves densely clustered at ends of twigs, linear-spatulate, 4 - 9 cm. long, covered with silky gray pubescence; inflorescence a long-peduncled very congested one-sided cyme; flowers white with pink tinge in throat, small (4 - 5 mm. long); fruit a dry brown 2-seeded drupe; small erect shrub, to 2 m. tall; infrequent, on front line of dunes, outer edge of salt flats, always fronting on ocean; not found on quiet bays or other low-energy coasts; Florida Keys, northward only along east coast, to Cape Canaveral. December - March. [*Tournefortia gnaphalodes* (L.) R. Br. ex R. & S.]
SEA-LAVENDER M. gnaphalodes (L.) Britt.

MYOSOTIS

The specific separation of *Myosotis macrosperma* from *M. virginica* is adequately supported on the basis of available materials. The merits of such a separation have been discussed by Fernald (Rhodora 41:558. 1939; 43:637. 1941), while the contrary view has been presented by Steyermark (Flora of Missouri, 1963).

Myosotis virginica (L.) BSP. (=*M. verna* Nutt.) has not been collected in Florida. The basis of its report for this state by Fernald (Gray's Manual of Botany, 1950) is a collection from Chattahoochee (*A. H. Curtiss*, GH). The collection has been examined by C. E. Wood who believes it to be *M. macrosperma*. Since the alluvial river edge at Chattahoochee is one of the Florida stations for *M. macrosperma*, there is no hesitancy in accepting Dr. Wood's determination.

Myosotis L. Forget-me-nots

1. Corolla small, white; calyx covered with hooked hairs, the two lower lobes appreciably longer than the three upper ones; leaves oblong to spatulate; annual soft-pubescent herb; very local, alluvial deposits along bank of Apalachicola River, Gadsden and Liberty counties. March. [*M. virginica* (L.) BSP. var. *macrosperma* (Engelm.) Fern.]
M. macrosperma Engelm.

ONOSMODIUM

This small genus has been discussed in considerable detail by Johnston (Contr. Gray Herb. 70:17-18. 1924; Jour. Arnold Arb. 35:18-24. 1954).

Onosmodium Michx. False Gromwells

1. Corolla 8 - 12 mm. long, exceeding calyx, cream at base with the lobes yellow-green; style undivided, long-exserted (to twice length of corolla), persisting on young fruits; nutlets light gray, smooth and shining, only one maturing per flower; leaves elliptic to obovate, harshly pubescent; perennial herb; frequent, dry open sandy woods and roadsides, north Florida, south to Hillsborough and Highlands counties. March - April.
FALSE GROMWELL. O. virginianum (L.) A. DC.

TOURNEFORTIA

Tournefortia volubilis has long been recognized as a member of the Florida flora. Small (Manual of the Southeastern Flora, 1933) admitted a second very closely allied species, *T. poliochros* (under his segregate name, *Myriopus poliochros*). Although recent West Indian treatments recognize these two as specifically distinct, the differences are almost inconsequential as exemplified by Florida collections, and are not here maintained.

All Florida plants of this complex are more or less pubescent. In southern Florida all collections are very lightly appressed sericeous on the lower leaf surface, only occasionally developing a gray cast. A single series of collections from Green Mound, south of Daytona Beach (*Small, Small, DeWinkeler 10726*, 7 Sept 1922; FLAS) appears to be the only basis for the white-canescent form that has been called *T. poliochros*.

Tournefortia L. Tournefortias

1. Leaf blade 3 - 5 cm. long, ovate to elliptic lanceolate; pubescence fine, closely appressed, scant to hoary gray on lower leaf surface; drupe white with small black spots, 1 - 4 seeded, each seed forming a separate lobe under the tightly stretched flesh; corolla dark yellow to greenish white, the lobes subulate; climbing and scrambling woody vine, occasionally free-standing as a low shrub; hammocks, thickets, shell mounds; frequent in Florida Keys and southern Dade County, disjunct on west to Hillsborough County (Cockroach Bay), rare along east coast (Merritt Island, Brevard County) and north to now-extirpated station at Green Mound, Volusia County (this station is the basis for *T. poliochros* in Florida, a variant with leaves hoary gray below). (December) March - August. [*Myriopus volubilis* (L.) Small; *T. poliochros* Spreng. in L.; *Myriopus poliochros* (Spreng.) Small] SOLDIER-BUSH. T. volubilis L.

1. Leaf blade 7 - 18 cm. long, elliptic; pubescence coarse, spreading, particularly abundant on young stems; drupe uniformly white, spherical, usually 4-seeded; corolla white, the lobes ovate; robust scrambling vine; occasional, tropical hammocks; southern Dade County, Monroe County (but absent from the Florida Keys), north to the Fahkahatchee Slough of Collier County. March - May. HAIRY TOURNEFORTIA. T. hirsutissima L.

EXCLUDED GENERA

Borago officinalis L. Borage. Two Florida collections of this Mediterranean species have been made (FLAS) -- both in Alachua County. Both are believed to represent cultivated plants. Borage in Europe has long been cultivated as a flavoring for beverages; although introduced and sparingly escaped in eastern North America it seems scarcely adapted to independent survival here.